What is claimed is:

1. A method of treating a metal surface comprising:

a) roughening the metal surface;

b) priming the roughened metal surface with a liquid primer composition comprising an organic polymer, an organic oligomer, an organic monomer, or mixtures thereof; and

c) applying a polymer material to the roughened metal surface with the liquid primer to form a bond with the roughened metal surface.

2. The method of claim 1, wherein mechanical pressure, heat or combinations thereof are applied to form the bond between the polymer material and the roughened metal surface.

3. The method of claim 1, wherein the organic polymer comprises a polyimide, a poly(meth)acrylate, a polycyanoacrylate, a rubber, a polyurethane, a butadiene, or mixtures thereof.

4. The method of claim 1, wherein the organic oligomer comprises a urethane oligomer.

5. The method of claim 1, wherein the organic monomer comprises a (meth)acrylate, an isocyanate, melamine glycoural cross-linker, or a heat activated methylol.

6. The method of claim 1, wherein the liquid primer further comprises one or more epoxy.

7. The method of claim 1, wherein the liquid primer further comprises one or more organo-silicon compound or silsesquioxane.

8. The method of claim 1, wherein the organic polymer, organic oligomer, or organic monomer comprises from 0.5% by weight to 95% by weight of the liquid primer.

9. The method of claim 1, wherein the metal surface is roughened by a chemical or mechanical process.

10. The method of claim 9, wherein the chemical method is an alternative oxide solution.

11. The method of claim 1, wherein the bond has a peel strength of from 4-10 pounds per linear inch.

12. The method of claim 11, wherein the bond has a peel strength of from 6-8 pounds per linear inch.

13. The method of claim 1, wherein the metal comprises copper, nickel, gold, silver, tin, lead, iron, or mixtures thereof.

14. The method of claim 12, wherein the polymer material comprises a pre-preg, an imageable dielectric, a photoimageable resin, a soldermask, an adhesive, or a polymeric etch resist.

15. The method of claim 12, wherein the roughened and primed metal layer bonded with the polymer material is a layer of a multi-layer circuit board.

16. A method of treating a metal comprising:

a) mechanically roughening the metal;

b) priming the roughened metal with a liquid primer composition comprising an organic polymer, an organic oligomer, an organic monomer, or mixtures thereof; and

c) applying a polymer material to the roughened metal with the liquid primer to form a bond with the roughened metal.

17. The method of claim 16, wherein the metal is mechanically roughened by air blasting, hand rubbing, brushing, or mechanical wheels.

18. The method of claim 17, wherein an abrasive used in mechanical roughening comprises diamond, garnet, or pumice.

19. A method or treating a metal comprising:

a) chemically roughening the metal with an adhesion promotion composition comprising an oxidizer, an inorganic acid, or mixtures thereof;

b) priming the roughened metal with a liquid primer composition comprising an organic polymer, an organic oligomer, and organic monomer, or mixtures thereof; and

c) applying a polymer material to the roughened metal with the liquid primer to form a bond with the roughened metal.

20. The method of claim 19, wherein the polymer material is an inner-layer of a multi-layer printed circuit board.